

Australian and New Zealand seas. In this change Miss Rathbun has been followed by nearly all writers who have since had occasion to refer to White's genus. Mr. Stebbing, in pt. iv. of his "South African Crustacea" (Ann. S. Afr. Mus. vi. p. 5, 1908)*, rehearses her argument and adopts her conclusion. It is somewhat surprising, therefore, to find that the supposed necessity for the transference of the name *Halimus* appears to rest upon a mistake.

Miss Rathbun, having shown that the genotype of *Halimus* is *H. aries*, Latreille (Guérin, Iconogr. Règne Anim., Crustacea, pl. ix. fig. 2, 1834?), goes on to add, "*aries* having been put in *Hyastenus*, White, 1847, which genus now becomes a synonym of *Halimus*." Mr. Stebbing repeats this statement, but neither author gives any reference for the supposed transfer of *Halimus aries*. As a matter of fact, I can find no evidence that it ever took place. What did happen was that A. Milne-Edwards in 1872 (Nouv. Arch. Mus. Paris, viii. p. 250) included as one of the species of *Hyastenus* the *Pisa aries* of Latreille ('Encyclopédie Méthodique,' x. p. 149, 1825-28), which is an entirely different species from *Halimus aries* (cf. Milne-Edwards, Hist. Nat. Crust. i. pp. 315 & 341).

XXXVII.—On African Bats and Shrews.

By OLDFIELD THOMAS.

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Rhinolophus foxi, sp. n.

Closely allied to *R. deckeni*, Peters, of East Africa, but greyer in colour and with smaller teeth.

Size rather less than in *R. deckeni*. General colour above "drab-grey," below more whitish grey. Nose-leaf and ears apparently as in *deckeni*.

Skull as in *R. deckeni*, but rather smaller; the nasal

* Mr. Stebbing here places the species he is discussing in his family Blastidæ, the Pisinæ of Alcock's classification; but in pt. v. of the same work (t. c. p. 284, 1910) he removes the same species without explanation to the family Inachidæ (Alcock's Inachinæ). The first position is appropriate to *Halimus*, Rathbun, the second to *Halimus*, Latreille. It seems possible that the names and not the characters of the specimen may have been the cause of this uncertainty.

swelling just about as in *deckeni*, larger than in *ferrum-equinum* and *augur**. Bony palate extending slightly further forward, to the level of the junction between p^4 and m^1 . Teeth all slightly smaller than in *deckeni*, the combined length of p^1-m^2 , on outer edge, being 5.3 mm. as against 5.8 in that species. Minute premolar still further reduced, absent on one side in each of the specimens, and on the other quite minute, smaller than an incisor, and placed in the narrow outer angle between the closely jammed canine and large premolar.

Dimensions of the type (the italicised measurements taken in the flesh):—

Forearm 50 mm. (♀ 51).

Head and body 57; tail 29; ear 25; third finger, metacarpal 36.5, first phalanx 16; lower leg and foot (c. u.) 30.

Skull: greatest length to front of canines 22.2; naso-occipital length 18.7; palatal length 3; front of canine to back of m^3 8.5.

Hab. Kabwir, Bauchi Plateau, Northern Nigeria. Alt. 2500 feet.

Type. Adult male. B.M. no. 13. 2. 5. 1. Original number 45. Collected 14th November, 1912, and presented by Mr. J. C. Fox, of the Cambridge University Mission. Two specimens, male and female.

This is evidently a western representative of *R. deckeni*, but the difference in the general size of the teeth and the reduction of the small premolar prevent my treating it as a subspecies of that bat, from which it is most readily distinguished by its much paler colour.

The British Museum possesses a good example of *R. deckeni* from Tanganiko, near Mombasa, collected and presented by Mr. A. Blayney Percival.

Myotis fuscipes, sp. n.

Near *P. rueppelli* and *pulcher*, but outer incisors larger.

General characters, including the striking contrast between the white or buffy underside and the greyish upperside, as in *P. rueppelli* and *pulcher*, but the membranes rather paler, while the forearms, hind legs, feet, and tail are darker, apparently black, so as to form a marked contrast with the pale

* I may note here that the bats from Mt. Kilimanjaro collected by Mr. R. Kemp on the Rudd Expedition to East Africa and referred by me to *R. deckeni* (Ann. & Mag. Nat. Hist. (8) vi p. 309, 1910) prove on renewed examination to be examples of *R. augur zambesiensis*, K. And.

membranes. Feet large in proportion. Calcar long, without post-calcareal lobule. Wings to the base of the fifth toe.

Skull rounder and more swollen than in *P. rueppelli*, the frontal region broader and more convex, and the brain-case more inflated. Supra-orbital edges more rounded, less ridged. Bony palate slightly shorter posteriorly.

Inner upper incisors not so long as in *P. rueppelli*, bicuspid, the secondary cusp well developed. Outer incisor much larger than in *rueppelli*, its longer cusp falling not far short of the outer cusp of the inner incisor, its base with two small secondary cusps, postero-internal and postero-external. Small upper premolar well developed, nearly half the height of the large premolar, quite visible from without, in the centre of the fairly large space between the canine and large premolar.

Dimensions of the type (the italicised measurements taken in the flesh):—

Forearm 36 mm.

Head and body 49; tail 41; ear 12; third finger, metacarpal 34·5, first phalanx 12·6, second phalanx 11; tibia 14; hind foot (c. u.) 10.

Skull: greatest length 13·5; basi-sinual length 9·8; front of canine to back of m^3 4·8.

Hab. Uganda. Type from 60 miles W. of Entebbe. Alt. 3700'.

Type. Adult male. B.M. no. 6. 7. 1. 5. Original number 1. Collected during the Ruwenzori Expedition by R. E. Dent. Several specimens.

In both *P. rueppelli* and *P. pulcher** the outer incisor is minute, and in the type of the latter species, which in other respects seems nearest to *P. fuscipes*, there is no indication of the characteristic contrasted coloration of the limbs and membranes.

Pipistrellus musciculus, sp. n.

A very minute species with unicolor fur.

Size excessively small, smaller than in any known bat. General colour perfectly uniform umber-brown, slightly darker than Ridgway's "burnt umber," the hairs of the same colour from base to tip; under surface similar, though appearing slightly lighter owing to the glossy tips to the

* The typical skull of *P. pulcher* has unfortunately been mislaid, but Dobson's statements (especially that in the synopsis of species) as to the size of its incisors are explicit.

hairs. Ears and membranes very dark, practically black. Inner margin of ears strongly convex at base, straight above; outer margin concave above, convex below. Tragus of medium size, its inner margin slightly concave, its outer convex, with an unusually large angular basal lobe. Wings to the base of the toes. Post-calcareal lobule well developed.

Skull very small, rounded, with short broad muzzle and proportionally high brain-case, not so flattened as in *P. minusculus* and other pigmy species. Palate extended posteriorly further than in any of the allied forms.

Upper inner incisor bicuspid, outer incisor probably also bicuspid, but too much worn down in the type for exact description, its tip about equalling the posterior cusp of the inner incisor. Anterior premolar small, not visible externally and not exceeding in height the cingular cusps of the canine and large premolar. Lower incisors small, tricuspid, not crowded or overlapping.

Dimensions of the type (the italicised measurements taken in the flesh):—

Forearm 24.4 mm.

Head and body 40; tail 24; ear 9.5; third finger, metacarpus 23.5, first phalanx 10.6; lower leg and hind foot (c. n.) 15.2.

Skull: greatest length 10.7; condylo-basal length 10.4; basi-sinual length 8; zygomatic breadth 7.5; intertemporal breadth 3.2; breadth of brain-case 5.5; palato-sinual length 4.4; front of canine to back of m^3 3.5; p^4-m^2 , length on outer edge 2.5.

Hab. Bitey, Ja River, S.E. Cameroons. Alt. 2000'.

Type. Old male. B.M. no. 13. 2. S. 1. Original number 622. Collected 3rd September, 1912, by Mr. G. L. Bates.

“Caught in hollow palm-leaf stalk—another got away.”—*G. L. B.*

This minute species appears to be the very smallest bat as yet described, its forearm being less than an inch in length. It is readily distinguishable from the other small African species by its short stumpy skull, elongated palate, and unicolor fur, the allied species having the fur dark basally and pale terminally. In *P. pusillulus*, Peters, which was described as having a forearm only 25 mm. in length, the skull is as large as in *P. nanus*, to which Dobson was probably right in referring it; its fur, as in the other small species, was bicolor.

Nyctinomus ansorgei, sp. n.

Allied to *N. cisturus*, Thos., with which alone it shares a somewhat *Chærephon*-like shape of skull combined with typical *Nyctinomus m*³ and premaxillæ.

Size about as in *N. cisturus*; distribution of fur as in that species, except that the tail and interfemoral are less hairy; a partly naked patch on the crown behind the junction of the ears, and another across the nape just in front of the shoulders. General colour above dark chocolate-brown, the tips of the hairs paler. Below, succeeding the naked chin, the throat is blackish brown, considerably darker than any other part of the animal, and suggesting the blackish beard of certain species of *Taphozous*; chest and belly lighter brown, the tips markedly lighter than the bases, but not anywhere white. Ears of medium size, rounded; basal keel not specially thickened; antitragus triangular, rounded above, about half as high as long, separated behind by a deep notch. Tragus small, subquadrangular, very different from the triangular pointed tragus of *N. cisturus*. Tail apparently without special glands.

Skull on the whole very similar to that of *N. cisturus*, but rather larger throughout; upper profile not so convex in the frontal region. Teeth as in *cisturus*; anterior upper premolar in the tooth-row, not crowded, but just filling up the space between the canine and *p*⁴. Lower incisors 4. Anterior lower premolar broader than the posterior.

Dimensions of the type (the italicised measurements taken in the flesh):—

Forearm 47 mm.

Head and body 70; tail 32; ear 19; tragus (dry) 1·5; third finger, metacarpus 46, first phalanx 18·6, second phalanx 19; fifth finger, metacarpus 28.

Skull: greatest length 19·2; zygomatic breadth 11·4; interorbital breadth 4·2; mastoid breadth 10·7; front of canine to back of *m*³ 7·4.

Hab. Malange, North Angola. Alt. 1150 m.

Type. Adult male. B.M. no. 10. 4. 8. 4. Original number 5. Collected 17th February, 1909, by Dr. W. J. Ansorge.

The Angolan species described by Sr. de Seabra all have the low skull of typical *Nyctinomus*, *N. cisturus* being the only known species combining a high skull with the complete *m*³ and divided premaxillæ which distinguish *Nyctinomus* from *Chærephon* and *Mops*. From *N. cisturus* the

new species is readily recognizable by its dark beard and non-glandular tail.

Charephon nigerie, sp. n.

Closely allied to *Ch. plicatus*, conspicuously larger than in any of the members of the *Ch. pumilus* group.

Size about as in *Ch. plicatus*. General colour dark brown throughout, except that the band of fur on the under side of the wing-membrane bordering the body between the humerus and femur is white, strongly contrasting with the uniformly dark body. Wing-membranes dull brown above and distally below, whitish proximally below. Ears and other soft parts apparently all as in *Ch. plicatus*.

Skull about the size of that of *Ch. plicatus*, but much lower and flatter, the upper profile almost straight instead of being strongly sinuate. Teeth as in the Indian species.

Dimensions of the type (measured on the spirit-specimen):—

Forearm 46 mm. (47 in second specimen).

Head and body 68; tail 37.5; ear 21; third finger, metacarpus 47.5, first phalanx 20, second phalanx 21; fifth finger, metacarpus 27, first phalanx 15; lower leg and hind foot (c. u.) 24.

Skull: condylo-basal length 18.6; mastoid breadth 11.5; front of canine to back of m^3 7.7.

Hab. Zaria Province, Northern Nigeria.

Type. Adult female. B.M. no. 11. 3. 22. 1. Collected and presented by A. C. Francis, Esq. Two specimens.

This bat is no doubt most closely allied to the Abyssinian *Ch. bivittatus*, Heugl., a species we have not got, but which is said to be almost identical with the Indian *Ch. plicatus*. Heuglin's bat has, however, a pale under surface, which would distinguish it from *Ch. nigerie*, whether it proves to have the high brain-case of *Ch. plicatus* or the more flattened one of the present species.

The Generic Position of two large Shrews.

At the instance of Mr. E. Heller I have again carefully considered the question of the generic position of the two giant African shrews described by me as *Croidura goliath* and *Sylvisorex somereni*, and have come to the conclusion that they might each form the basis of a special genus, on the characters described below.

Crocidura goliath.

This shrew is distinguished externally from all its allies by the characters of the fur, which, instead of being close, velvety, and practically all of one sort, as is the case with all *Crociduræ*, is long, loose, coarse, and composed of two sorts of hair, an underfur and a number of elongated bristles double the length of the underfur. In fact the fur is more like that of a rat than a shrew. No approximation to the condition in *C. goliath* is shown by any of the large number of species of *Crocidura*.

In the skull most of the characters are those ordinarily correlated with the unusually large size of the animal, such as the great development of the cranial ridges and the roughening of the surface of the bones. In the pterygoid region, however, there is a peculiarity distinctive of *C. goliath*—namely, that there is practically none of the inflation and broadening of the pterygoids so marked in typical *Crocidura*, the ectopterygoids being scarcely perceptible and the entopterygoids being mere thin vertical plates parallel with each other, and with the hamular processes set symmetrically at their tips instead of converging inwards over the mesopterygoid fossa. As a result of the reduction in the dilation of the pterygoids, the whole pterygoid region is much narrower, as may be gauged by the fact that the distance between the notches at the inner ends of the glenoid processes of the two sides is little more than the breadth of either of the glenoid processes themselves, while in *Crocidura* this distance is nearly twice the breadth of each glenoid process.

This character of the breadth between the glenoid notches will readily separate *C. goliath* from any members of *Crocidura*, even where, as is the case in certain large African species, the inflation of the pterygoids is not so marked as it is in the small and more typical species, such as *C. russula* and *C. leucodon*. On the other hand, some of the large Indian species of *Pachyura* have the pterygoid region more like that of *C. goliath*, but these are of course distinguished by their greater number of teeth.

As a generic name for *C. goliath* I would suggest *Præsores*.

Sylvisorex somereni.

The moment that *Præsores goliath* is removed from the genus *Crocidura* the reasons which induced me, though with much hesitation, to include in the genus *Sylvisorex* the remarkable species described under the above name fall to the

ground. For Van Someren's shrew shows certain analogies with *P. goliath*, and I argued that if *Crocidura* could vary so widely as to include *goliath*, a similar variation should be allowed in *Sylvisorex*, large as is the gap between *somereni* and the other species. I therefore now propose to create a genus, to be called *Scutisorex*, for *S. somereni*, the chief characters of which would be the long thick fur, quite different from the short velvety coat of *Sylvisorex*, and the great development of the cranial ridges, as compared with the practically smooth unridged skull of *Sylvisorex*. The structure of the pterygoid region is as in *Crocidura*, not as in *Prasorex*.

Sylvisorex ollula, sp. n.

A large species, with narrow elongated skull.

Size larger than in any known species of *Sylvisorex*, after the removal of *Scutisorex somereni* from the genus. Form slender. Fur soft, velvety; hairs of back about 5 mm. in length. General colour above dark slaty grey, slightly browner and darker than Ridgway's "mouse-grey." Under surface rather paler, the belly inconspicuously tinged with bistre. Ears unusually large, their vertical height from the outer base appearing much greater than in other species. Hands and feet brownish white. Tail rather shorter than the body without the head, slender, finely scaled, uniformly dark grey.

Skull in general shape like that of *S. lunaris*, but much larger; the brain-case high, narrow, not flattened, the muzzle long and slender. A slight sagittal and well-marked lambdoidal crests present, though the specimen is by no means old.

Third unicuspid rather larger than second, fourth nearly equal to second in height, and about two-thirds its area, not crowded or out of line, a space between it and the large premolar.

Dimensions of the type (measured in the flesh):—

Head and body 100 mm.; tail 57; hind foot 16; ear 12.

Skull: condylo-incisive length 24.6; condylo-basal length 23.8; breadth across brain-case 11; front of i^1 to back of m^3 11.1.

Hab. Bitey, Ja River, S.E. Cameroons. Alt. 2000'.

Type. Adult male. B.M. no. 13. 2. 8. 5. Collected 6th August, 1912, by Mr. G. L. Bates.

This shrew is readily distinguishable from any other *Sylvisorex* by its large size. The skull of the next largest species, *S. lunaris*, from Ruwenzori, is only 22 mm. in condylo-basal length.